TEST 3

1. **The male reproductive parts of flower are called?**

- A: Gynoecium
- B: Calyx
- C: Corolla
- D: Androecium

2. **Which of the following character is missing in Kingdom Animalia?**

- A: Multicellular
- B: Eukaryotic
- C: Diploid
- D: Autotrophs

3. **In bryophytes the structure which is similar to the roots of vascular plants are the:**

- A: Antheridia
- B: Rhizoids
- C: Zooids
- D: Archegonia

4. **In Angiospermae leaves bearing ovules are folded and joined at the margins to form_____?**

- A: Fruits
- B: Seeds
- C: Ovaries
- D: Flowers

5. **_______________ is also called liver fluke.**

- A: Dugesia
- B: Taenia
- C: Fasciola
- D: Coral

6. **In double fertilization one of two male gametes fuses with the secondary nucleus to form endosperms while second male gamete fuses with egg to form_______?**

- A: Nucleus
- B: Haploid Zygote
- C: Oospore
- D: Embryo

7. **In which of the following class of Annelida locomotion organs are not present and they move due to the contraction of their body with the help of suckers?**

- A: Class Polychaeta
- B: Class Oligochaeta
- C: Class Hirudinea
- D: None of these

8. **Important terrestrial adaptation that evolved exclusively in seed plants include all of the following except**

- A: Pollination by wind or animal instead of fertilization by swimming sperm
- B: Transport of water through vascular tissues
- C: Retention of the gametophyte plant within the sporophyte
- D: Dispersal of new plant by seeds

9. The unique feature of bryophytes compared to other green plant group is that

- A: They produce spores
- B: They lack vascular tissue
- C: They lack roots
- D: Their sporophyte is attached to the gametophyte

10. Name common gut roundworm parasite of humans and pigs :

- A: Ascaris Lumbricoides
- B: Lumbricus Terresaris
- C: Pheretima Posthuma
- D: Hirudo Medicinalis

11. A heterosporous plant is one that:

- A: Produces a gametophyte that bears both sex organs
- B: Produce microspores and megaspores in separate sporangia, giving rise to separate male and female gametophytes
- C: Is a seedless vascular plant
- D: Produce two kinds of spores, one asexually by mitosis and one type by meiosis

12. The largest class of the Mollusca which includes snails and slugs is:

- A: Bivalvia
- B: Gastropoda
- C: Cephalopoda
- D: Monoplacophora

13. Which one was the first Plant in which True leaves and roots were formed?

- A: Cooksonia
- B: Psilotum
- C: Lycopods
- D: Horneophyton

14. In human E. Coli is involved in the formation of :

- A: Calcium
- B: Vitamin D
- C: Vitamin K
- D: Vitamin A

15. Which one of the following is not included in Subdivision of Bryophytes?

- A: Hepaticopsida
- B: Bryopsida
- C: Anthoceropsida
- D: Lycopsida

16. Which specie of plant does not belongs to Fabaceae family which is also known as Pea family?

- A: Lathyrus odoratus
- B: Arachis hypogea
- C: Cicer arietinum
- D: Solanum tubersum

17. Mollusca in which bodies arc enclosed in a shell which consists of right and left piece are included in class:

- A: Bivalvia
- B: Gastropoda
- C: Cephalopoda
- D: Monoplacophora

18. The fruit of ______ and ______ are rich in Vitamin C and A and are used as Condiment.

- A: Capsicum annum and Capsicum frutescens
- B: Capsicum annum and Nicotiana tabacum
- C: Lycopersicum esculentum and Capsicum frutescens
- D: Capsicum annum and Solanum tuberosum

19. The male gametophyte of an angiosperm is the:

- A: Anther
- B: Embryo sac
- C: Microspore
- D: Germinated pollen grains

20. Which family is also known as Night shade or Potato family?

- A: Fabaceae
- B: Caesalpiniaceae
- C: Poaceae
- D: Solanaceae

TEST 4

1. Transportation of water and minerals in Bryophytes occur through______?

- A: Xylem
- B: Phloem
- C: Diffusion or osmosis
- D: All of these

2. Platyhelminthes are best described as:

- A: Flatworms, triploblastic, acoelomates animals
- B: Flatworms, diploblastic, acoelomates animals
- C: Flatworms, triploblastic, coelomates animals
- D: Flatworms, triploblastic, pseudo coelomates

3. It is assumed that evolution of megaphyll included series of successive evolutionary steps among which is the arrangement of unequal dichotomies in one plane. This process is known as_____?

- A: Overtopping
- B: Fusion
- C: Webbing
- D: Planation

4. Which of the following Platyhelminthes is not endoparasite, i.e., live inside their host?

- A: Liver fluke
- B: Blood fluke
- C: Tapeworm
- D: Planaria

5. In which class of Pteropsida seedless plants with foliar sporangia are present?

- A: Filicineae
- B: Gymnosperm
- C: Angiosperm
- D: Both in B & C

6. _______ is the first group of the invertebrates which have developed a closed circulatory system?

- A: Flat worm
- B: Sponges
- C: Annelids
- D: Coelenterates

7. **Bryophytes plants possess which of the following characteristics_______?**

- A: Non-Vascular, Flowerless
- B: Vascular, flowerless
- C: Vascular, flowering
- D: Non-Vascular, flowering

8. **Polymorphism is a mechanism exhibited by?**

- A: Coelenterates
- B: Arthropods
- C: Porifera
- D: Platyhelminthes

9. **A spider is different from the insects because of the reasons:**

- A: It has four pairs of legs
- B: Does not have any antenna
- C: Body is divided into two parts
- D: All of these

10. **Which fern grows along moist walls and water courses and its stem is a short, thick and underground, usually unbranched horizontally growing rhizome?**

- A: Pteridium
- B: Dryopteris
- C: Pteris
- D: Adiantum

11. **Which of the following phylum of Kingdom Animalia have well developed excretory system containing malpighian tubules?**

- A: Arthropoda
- B: Annelida
- C: Mollusca
- D: Porifera

12. **Multicellular male reproductive organ of Bryophytes is:**

- A: Archegonia
- B: Antheridia
- C: Oogamy
- D: Sporangium

13. **Which of the following arthropods are aquatic and have gills for respiration?**

- A: Class Crustacea
- B: Class Insecta
- C: Class Arachnida
- D: Class Myriapoda

14. **During development in an animal, mesoderm layer give rise to:**

- A: Nervous system
- B: Alimentary canal
- C: Mouth
- D: Skeletal and muscular system

15. **Which of the following is not included in Non-Vascular Plants?**

- A: Liverworts
- B: Mosses
- C: Hornworts
- D: Club Mosses

16. Nematocysts are the specialized cells found in the members of phylum________?

A: Cnidaria
B: Porifera
C: Annelida
D: Mollusca

17. Horsetails are included in class

A: Sphenopsida
B: Lycopsida
C: Psilopsida
D: Pteropsida

18. The branches of________ provide excellent walking sticks and wood.

A: Crataegus
B: Pyrus Pastia
C: Fragaria
D: Malus

19. Many Colonial coelenterates such as corals produce a hard exoskeleton formed of________?

A: $CaCl_2$
B: $CaCO_3$
C: $CaSO_4$
D: None of these

20. _________ is the beautiful and delicate sponge made of glassy frame work. It is commonly called Venus flower basket?

A: Sycon
B: Spongilla
C: Euplectella
D: Leucoselenia

DIGESTION

TEST 1

1. Which group of animals have teeth structurally and functionally intermediate between the extremes of specialization?

- A: Omnivores.
- B: Herbivores.
- C: Carnivores.
- D: Macrophagous feeders.

2. Which of these is not a disease but a symptom of other disorders?

- A: Piles
- B: Bulimia nervosa
- C: Food poisoning
- D: Dyspepsia

3. What are the characteristic movements of digestive system called?

- A: Swallowing.
- B: Peristalsis.
- C: Antiperistalsis.
- D: Mastication.

4. Where is partly digested food stored in the cockroach?

- A: Malpighian tubule
- B: Gizzard
- C: Mesenteron
- D: Crop

5. Where does the most absorbtion of digested food takes place?

- A: Duodenum.
- B: Jejunum.
- C: Ileum.
- D: Ascending colon.

6. The function of goblet cells is to secrete?

- A: Gastrin
- B: HCl
- C: Pepsinogen
- D: Mucus

7. In which form the food is pushed to the back of mouth by the action of tongue?

- A: Grinded food.
- B: Bolus.
- C: Chyme.
- D: Digested food.

8. Which of these is the longest segment of small intestine?

- A: Duodenum.
- B: Jejunum.
- C: Ileum.
- D: All are of same length

9. In large intetine, vitamin K is formed by the activity of ?

- A: Symbiotic bacteria
- B: Obligate bacteria
- C: Parasitic bacteria
- D: Facultative bacteria

10. What is the action of backward movement of tongue on epiglottis?

- A: Epiglottis goes in a horizontal position.
- B: Closes the glottis.
- C: Epiglottis goes in a vertical position.
- D: Both A & B.

11. Which of these is an omnivore?

- A: Cattle.
- B: Cat.
- C: Crows.
- D: Dog.

12. What is the midgut of cockroach called?

- A: Gizzard
- B: Crop
- C: Mesenteron
- D: Colon

13. What is the major function of rectum in cockroach?

- A: Breakdown of food.
- B: Grinding.
- C: Digestion.
- D: Temporary storage.

14. What is the mode of nutrition in earthworm?

- A: Omnivores.
- B: Macrophagous feeders.
- C: Detrivores.
- D: Filter feeders.

15. What are the 3 sites of digestion in humans?

- A: Oral cavity, esophagus, stomach.
- B: Oral cavity, stomach, small intestine.
- C: Stomach, small intestine, colon.
- D: Stomach , small intestine, liver.

16. Which organelle fuses with food vacuole in amoeba in the first step of digestion?

- A: Ribosome
- B: Phagosome
- C: Lysosomes
- D: Golgi vesicles

17. Which force assists the movement of material through the esophagus?

- A: Gravity.
- B: Body movements.
- C: Antiperistalsis.
- D: Digestion.

18. Which group of teeth is most important in carnivores?

- A: Incisors.
- B: Premolars.
- C: Molars.
- D: Canines.

19. **The diagram shows the four types of human tooth. Which teeth are used for cutting rather than grinding food?**

- A: 1 and 2
- B: 2 and 3
- C: 3 and 4
- D: 4 and 1

20. **What is the benefit of capturing prey in insectivorous plants?**

- A: Autotrophism.
- B: Rapid growth.
- C: Food variety.
- D: Fast metabolism.

TEST 2

1. **Histamine is produced by which cells?**

- A: Basophils
- B: Platelets
- C: Monocytes
- D: Eosinophils

2. **Which teeth are mainly responsible for the grinding of food in humans?**

- A: Incisors
- B: Canines
- C: Premolars
- D: Molars

3. **Where are the salivary glands present in cockroach?**

- A: Mouth cavity
- B: Malpighian tubule
- C: Pharynx
- D: Thorax

4. **Which of the following organisms has the digestive cavity known as coelenteron?**

- A: Planaria
- B: Cockroach
- C: Hydra
- D: Amoeba

5. **What is the effect of phosphorus deficiency in plants?**

- A: Chlorosis.
- B: Stunted growth of roots.
- C: Preamature death.
- D: Leaf margins yellowing.

6. **Which of these is not an animal mode of nutrition?**

- A: Detritivores
- B: Fluid feeders
- C: Parasitic
- D: Autotrophism

7. **Saliva is basically composed of water,mucus,amylase and :**

- A: Sodium hydroxide
- B: Sodium bicarbonate
- C: Hydrocarbons
- D: Sodium chloride

8. **Cat belongs to which group of animals on the basis of nutrition?**

- A: Herbivores.
- B: Carnivores.
- C: Omnivores.
- D: Macrophagous feeders.

9. **Bicarbonate ions in the human digestive system are released by which organ?**

- A: Liver
- B: Gallbladder
- C: Pharynx
- D: Pancreas

10. **Which of the following is the stimulus for gastrin production in humans?**

- A: Protein
- B: Lipid
- C: Carbohydrate
- D: Vitamins

11. **Gastric glands are composed of _______________ types of cells?**

- A: 2
- B: 3
- C: 4
- D: 5

12. **Trypsinogen is activated to trypsin by :**

- A: HCl
- B: Enterokinase
- C: Mucus
- D: Gastrin

13. **Which of these is a function of saliva?**

- A: Moistening and lubrication.
- B: Antisepsis and stabilization of pH.
- C: Carbohydrate digestion.
- D: All of these.

14. **Which of these is not a method of macrophagous feeding?**

- A: Tentacular feeding.
- B: Grazing.
- C: Scraping.
- D: Seizing.

15. **How insects are trapped in sundew plant?**

- A: Cannot climb out because of stiff hair.
- B: Interlocked between stiff bristles
- C: Caught in sticky fluid at the end of leaf.
- D: Stuck in complex leaf structure.

16. What are the blind ends of intestine branchings in planaria called?

- A: Cnidocil
- B: Eyespot
- C: Caecae
- D: Colon

17. Which cells in hydra are responsible for mixing of food with enzymes and breaking it up into fine particles?

- A: Glandular cells.
- B: Flagellate cells.
- C: Cnidocil.
- D: Nematocyst.

18. Which one of the following vitamins is produced by the microflora of large intestine?

- A: Vitamin D
- B: Vitamin C
- C: Vitamin K
- D: Vitamin A

19. What is the correct sequence of characteristic process of holozoic nutrition?

- A: Ingestion - assimilation - digestion - egestion
- B: Ingestion - digestion - egestion - assimilation
- C: Digestion - absorbtion - assimilation - ingestion
- D: Ingestion - digestion - absorbtion - assimilation

20. In which case the walls of stomach or duodenum become denuded of mucus protection and a sore develops?

- A: Piles
- B: Dyspepsia
- C: Food poisoning
- D: Ulcer

TEST 3

1. What of the following causes hunger pangs in humans?

- A: Hypoglycemia
- B: Hyperglycemia
- C: Hypotension
- D: Hypocalcemia

2. Which herbivore does not have upper incisors?

- A: Horse.
- B: Sheep.
- C: Cow.
- D: Camel.

3. How long after previous meal does a hunger pang begins?

- A: 6 - 12 hours.
- B: 12 - 24 hours.
- C: 24 - 36 hours.
- D: 36 - 48 hours.

4. What is the burning sensation caused by the back flush of acidic chyme into esophagus called?

- A: Vomiting
- B: Antiperistalsis
- C: Pyrosis
- D: Indigestion

5. In which disease related to nutrition serum electrolyte imbalance is very common?

- A: Obesity
- B: Anorexia nervosa
- C: Bulimia nervosa
- D: Piles

6. What is the main function of gall stones?

- A: Digest proteins.
- B: Generate bile pigments.
- C: Activate trypsinogen.
- D: Block the relase of bile.

7. Which of these cause food poisoning and have selective action on central nervous system?

- A: Salmonella.
- B: Campylobactor.
- C: Clostridium.
- D: Streptococci.

8. What is the main function of zymogen cells in the human stomach?

- A: Decrease in stomch pH.
- B: Regulation of secretion.
- C: Mucus production.
- D: Protein digestion.

9. Which plant has a characteristic bilobed leaves with midrib between them and a row of long stiff bristles along margin of each lobe?

- A: Sarracenia pupurea.
- B: Brassica campestris.
- C: Drosera intermedia.
- D: Dionaea muscipula.

10. HCl in gastric juice is secreted by which one of the following cells?

- A: Chief Cells
- B: Oxyntic cells
- C: Mucous Cells
- D: Kupfer cells

11. What is the major benefit of grinding?

- A: Easy swallowing and fast digestion
- B: Protection from foreign bodies.
- C: Easy digestion.
- D: Fast egestion.

12. What is the other component of pancreatic secretions apart from the digestive enzymes?

- A: Mucus
- B: Hydrochloric acid
- C: Sodium bicarbonate
- D: Water

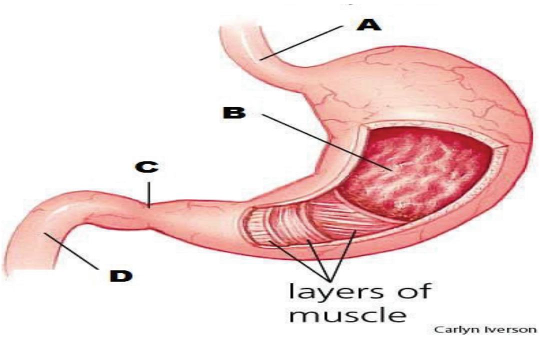
13. Which of the following cells are not part of the stomach?

- A: Parietal cells.
- B: Zymogen cells.
- C: Endocrine cells.
- D: Goblet cells.

14. **Which of these does not produce the mentioned secretion?**

- A: Mucus cells - mucus.
- B: Parietal cells - hydrchloric acid.
- C: Zymogen cells - pepsinogen.
- D: Oxyntic cells - pepsinogen.

15. **Identify duodenum in the figure below:**



- A: A
- B: B
- C: C
- D: D

16. **What are the 3 kinds of cells present in the human gastric glands?**

- A: Mucous, parietal and oxyntic.
- B: Zymogen, parietal, oxyntic.
- C: Mucous, oxyntic, zymogen.
- D: Parietal, oxyntic, chief cells.

17. **What is meant by piles?**

- A: Voracious eating followed by self induced vomiting or fasting.
- B: Incomplete or imperfect digestion.
- C: Having abnormal amount of fat on body.
- D: Masses of dilated, tortuous veins in anorectal mucosa.

18. **Which of these lives as a twining parasite?**

- A: Dodder.
- B: Puccinia.
- C: Lichen.
- D: Mycorrhiza.

19. **What is the pH required for the 2nd phase of digestion in amoeba during which it is completed?**

- A: 5.6
- B: 7
- C: 7.3
- D: 4.5

20. **How does the planaria engulfs the prey?**

- A: Prey is paralyzed by ejecting poison and grasped and pushed into mouth.
- B: By protruding eversible pharynx through mouth and pushes it into gastrovascular cavity.
- C: By forming a food vacuole.
- D: By simple mouth feeding.

TEST 4

1. What component of a prey is beneficial in insectivorous plants?

- A: Nitrogenous compounds.
- B: Fatty acids.
- C: Minerals.
- D: Enzymes.

2. The hormone which inhibits the secretion of gastric juice is:

- A: Secretin
- B: Gastrin
- C: Thyroxin
- D: Parathromone

3. Which of the following matches the correct enzyme with substrate?

- A: Erypsin – Maltose
- B: Maltase - Lactose
- C: Amino peptidase – Dipeptides
- D: Lipase - Fat

4. What is the condition arising due to the excessive water absorbtion from large intestine?

- A: Diarrhea
- B: Gall stones
- C: Urinary tract infection
- D: Constipation

5. The lymph vessel of villi is called :

- A: Epithelium
- B: Afferent Lymph vessel
- C: Adenoids
- D: Lacteals

6. What is the mode of nutrition in aphids?

- A: Filter feeders.
- B: Fluid feeders.
- C: Macrophagous feeders.
- D: Detrivores.

7. What is the parasite called that lives in host at all the times ?

- A: Endoparasite.
- B: Ectoparasite.
- C: Obligate.
- D: Facultative.

8. Which of the following enzymes is released in inactive form ?

- A: Amylase
- B: Lipase
- C: Enterokinase
- D: Pepsin

9. Which organism provides protection against desiccation in lichens?

- A: Algae.
- B: Roots.
- C: Bacteria.
- D: Fungus.

10. What is the mode in which water entering body is responsible for providing nutrition?

- A: Filter feeders.
- B: Macrophagous feeders.
- C: Detrivores.
- D: None of the above.

11. Which cells produce mucus in large intestine?

- A: Goblet cells.
- B: Absorptive cells.
- C: Endocrine cells.
- D: Parietal cells.

12. Which of the following is the last part of the small intestine?

- A: Duodenum
- B: Ileum
- C: Jejunum
- D: Colon

13. What kind of nutrition is seen in Puccinia?

- A: Autotrophic.
- B: Saprophytic.
- C: Parasitic.
- D: Symbiotic.

14. How many princple layers are present in human stomach wall?

- A: 1
- B: 2
- C: 3
- D: 4

15. Pepsin, protein digesting enzyme sets best pH:

- A: 3
- B: 4.5
- C: 2
- D: 6

16. The following reaction occurs in the human alimentary canal.

starch -> enzyme -> products, What is the enzyme and the product?

- A: Acid, Glucose
- B: Alkali, Energy
- C: Amylase, Maltose
- D: Bile, Amino acid

17. ___________ is activated to ______________, by enterokinase/ enteropeptidase enzyme secreted by the linning of duodenum.

- A: Trysinogen,trypsin
- B: Pepsinogen,pepsin
- C: Pepsinogen,trysin
- D: Chymotrypsinogen,chymotrypsin

18. Which type of feeding is seen in hydra?

- A: Scraping.
- B: Filter.
- C: Seizing and swallowing.
- D: Tentacular.

19. Trypsinogin is converted into trypsin by the activity of:

- A: Goblet cells
- B: Absorbtive cells
- C: Enteropeptidase
- D: Enterokinase

20. Which organ in humans plays the most important role in the selection of food?

- A: Stomach
- B: Esophagus
- C: Tongue
- D: Nose

GASEOUS EXCHANGE

TEST 1

1. About 70-85% CO_2 is carried in blood as :

- A: Carboxy Hb
- B: Freely as CO_2
- C: With proteins in plasma
- D: As bicarbonate

2. Iron contaning pigment present in muscle fiber is?

- A: Myoglobin
- B: Hemoglobin
- C: Biliverdin
- D: Bilirubin

3. Hemoglobin is ?

- A: Lipid in nature
- B: Protein in nature
- C: Carbohydrate in nature
- D: Lipoprotein in nature

4. During inspiration diaphragm moves ?

- A: Downward
- B: Upward
- C: Inward
- D: Outward

5. Skin of earth worm is rich in ?

- A: Capillaries
- B: Sweat glands
- C: Hair follicle
- D: Sebaceous glands

6. Respiration occurs at how many levels?

- A: 2
- B: 3
- C: 4
- D: 5

7. How many pairs of gills are present in fish?

- A: 1-2
- B: 2-3
- C: 3-4
- D: 4-5

8. One complete heart beat consist of one systole and one diastole and lasts for :

- A: 0.8 sec
- B: 0.2 sec
- C: 0.4 sec
- D: 0.5 sec

9. The wall of trachea contains C shaped structure called?

- A: Cartilagenous rings
- B: Elastic rings
- C: Muscular rings
- D: None of above

10. Cellular respiration is a process by which cell utilize oxygen and proteins, and produce?

- A: CO
- B: CO_2
- C: NO
- D: NO_2

11. In humans complex cartilagenous structure also known as voice box is called?

- A: Nostrils
- B: Trachea
- C: Pharynx
- D: Larynx

12. The total capacity of lungs is about?

- A: 4 litres
- B: 5 litres
- C: 6 litres
- D: 7 litres

13. Bronchioles are made up of?

- A: Longitudinal smooth muscle
- B: Circular smooth muscle
- C: Both longitudinal and circular smooth muscle
- D: skeletonal muscle

14. Stomata are largely present in which part of the plants?

- A: Leaves
- B: Old stem
- C: Root
- D: Flower

15. The most common respiratory substance as a source of energy is :

- A: Glucose
- B: Sucrose
- C: Fructose
- D: Insulin

16. Gaseous exchange in frog occurs through ?

- A: Lungs
- B: Skin
- C: Buccal cavity
- D: All of above

17. Which part of chest cavity is formed by diaphragm?

- A: Roof
- B: Medilal wall
- C: Floor
- D: Lateral wall

18. In cockroach main trunk communicate with exterior by means of ?

- A: Holes
- B: Pores
- C: Spiracles
- D: Stomata

19. Exchange of gases in lungs occur through ?

- A: Active transport
- B: Passive transport
- C: Facilitated diffusion
- D: Diffusion

20. Which one of the following feature is present in Respiratory surface of animals ?

- A: Thick epithelium
- B: Smal surface area
- C: Extensive capillary network
- D: Dryness

TEST 2

1. **Most of the CO_2 in human body is transported as?**

- A: Carboxyhaemoglobin
- B: Absorbed in plasma proteins.
- C: Bicarbonate ion.
- D: Corpuscles combined with potassium.

2. **Factor/s affecting oxygen carrying capacity of hemoglobin is/are?**

- A: Carbon dioxide
- B: Temparature
- C: PH
- D: All of above

3. **Haemoglobin combines with oxygen to form?**

- A: Oxyhaemoglobin
- B: Carboxyhaemoglobin
- C: Methemoglobin
- D: Reduced haemoglobin

4. **In hydra, the exchange of oxygen and carbondioxide takes place through the lining of ?**

- A: Digestive cavity
- B: Respiratory cavity
- C: Skin
- D: Mucous membrane

5. **Air spaces comprise how much volume of leaf?**

- A: 30%
- B: 40%
- C: 50%
- D: 60%

6. **When carbondioxide level increases, the ability of hemoglobin to hold oxygen ?**

- A: Increases
- B: Decreases
- C: Becomes variable
- D: Remains same

7. **Residual air volume of lungs is?**

- A: 1/4 litre.
- B: 1/2 litre.
- C: 1 litre.
- D: 1.5 litres.

8. **In birds lungs have developed several extensions known as?**

- A: Alveoli
- B: Parabronchi
- C: Bronchi
- D: Air sacs

9. **Absorbing surface of lung is greatly reduced in which disease?**

- A: Emphysema
- B: Asthama
- C: Pneumonia
- D: Tuberculosis

10. The total inside capacity of the lung is __________ for men.

- A: 7 liters
- B: 6-7 liters
- C: 5 liters
- D: 2.5 liters

11. In cockroach spiracles are present on ?

- A: Medial side of body
- B: Dorsal side of body
- C: Ventral side of body
- D: Lateral side of body

12. Breathing is what kind of process?

- A: Mechanical process
- B: Chemical process
- C: Biochemical process
- D: Electrical process

13. Number of stomata per square centimeter in the leaf of tobacco plant are ?

- A: 15000
- B: 14000
- C: 13000
- D: 12000

14. 5% of carbondioxide is carried to lungs ?

- A: By serum
- B: By plasma protein
- C: as bicarbonate ions
- D: as carboxyhemoglobin

15. In photo respiration glycine is converted into serine in ?

- A: Cytosol
- B: Endoplasmic reticulum
- C: Mitocondria
- D: Nucelus

16. Respiratory system is most efficient in?

- A: Humans
- B: Frog
- C: Fish
- D: Birds

17. How many spiracles pair are present in cockroach?

- A: 5
- B: 10
- C: 15
- D: 20

18. Which of the following described the movements involved in breathing out?

Movement of ribs, and movement of Diaphragm

- A: Ribs down and in diaphragm downwards
- B: Ribs down and in diaphragm upwards
- C: Ribs up and out diaphragm downwards
- D: Ribs up and out diaphragm upwards

19. Oxyhemoglobin in earth worm release oxygen at?

- A: Cellular level
- B: Organ level
- C: Tissue level
- D: None of these

20. Airs moves out in expiration due to ?

- A: Contraction of intercostal muscles
- B: Contraction of diaphragm
- C: Active contraction of lungs
- D: Passive contraction of lungs

TEST 3

1. In emphysema alveoli have?

- A: Decreased volume and surface area
- B: Increased volume and surface area
- C: Decreased volume and increased surface area
- D: Increased volume and decreased surface area

2. Respiratory distress syndrome is common in premature infants with a gestational age of less than?

- A: 9 months
- B: 8 months
- C: 7 months
- D: 6 months

3. Tuberculosis(TB) is a disorder of respiratory respiratory system caused by?

- A: Mycobacterium laprae
- B: Mycobacterium marinium
- C: Mycobacterium tuberculosis
- D: Mycobacterium kansasi

4. In cockroach branching system of tubule called tracheae is lined by?

- A: Peptidogylcan
- B: Lipoprotein
- C: Chitin
- D: Glycocalyx

5. Saturation of hemoglobin at 115 mmHg of oxygen is?

- A: 96%
- B: 97%
- C: 98%
- D: 99%

6. Which of the following is the functional unit of lungs?

- A: Bronchus
- B: Bronchi
- C: Bronchioles
- D: Air sac

7. During expiration ribs move?

- A: Downward and outward
- B: Downward and inward
- C: Upward and outward
- D: Upward and inward

8. In humans, nasal cavities are lined with mucous membrane of ?

- A: Ciliated epithelium
- B: Squamus epithelium
- C: Transitional epithelium
- D: Cuboidel epithelium

9. Which of the following element in plasma form bicarbonate ion with CO_2 to transport it?

- A: Sodium
- B: Potassium
- C: Magnesium
- D: Calcium

10. During the act of swallowing larynx is closed by ?

- A: Glottis
- B: Epiglottis
- C: Vocal cords
- D: Mucous flap

11. In fish, gills surface is ventilated by constant flow of ?

- A: Oxygenated blood
- B: Air
- C: Water
- D: Serum

12. Human organs which can least withstand anoxia are?

- A: Brain and muscle
- B: Skin and muscle
- C: Brain and heart
- D: Heart and liver

13. Enzyme present in red blood cells which facilitate the oxygen carrying activity of hemoglobin is?

- A: Phosphodiesterase
- B: Carbonic anhydrase
- C: Lecithinase
- D: Urease

14. In asthama contraction of bronchioles is caused by the release of?

- A: Serotonin
- B: Epinephrine
- C: Norepinephrine
- D: Histamine

15. In cockroach how many pairs of spiracles are present in thorax?

- A: 2 pairs
- B: 3 pairs
- C: 4 pairs
- D: 5 pairs

16. In humans, the muscular air passage lined by mucous membrane is called?

- A: Nostrils
- B: Pharynx
- C: Larynx
- D: Tracheae

17. Percentage of CO_2 in the air exhaled by humans is?

- A: 0.04 %
- B: 2 %
- C: 3 %
- D: 4 %

18. The wall of chest cavity is made up of?

- A: Ribs only
- B: Intercostal muscles only
- C: Ribs and intercostal muscles
- D: Ribs and diaphragm

19. Carcinoma of lung is a?

- A: Malignent tumor
- B: Benign tumor
- C: Dysplastic growth
- D: Metaplastic growth

20. Lungs are covered with double layred thin membranous sac called?

- A: Meninges
- B: Pericardium
- C: Pleura
- D: Peritoneum

TEST 4

1. **In most animals epithelium which seperates air and blood has thickness of?**

A: 1 cell thick | B: 2 cell thick
C: 3 cell thick | D: 4 cell thick

2. **Amount of carbondioxide in venous blood is?**

A: 40ml/100ml of blood | B: 45ml/100ml of blood
C: 50ml/100ml of blood | D: 54ml/100ml of blood

3. **Percentage of oxygen in the exhaled air by humans is about?**

A: 21% | B: 19%
C: 17% | D: 16%

4. **The number of air sacs in most of the birds are ?**

A: 8 | B: 9
C: 10 | D: 11

5. **Allergic reaction to pollen ,spore,cold etc is khown as?**

A: Emphysema | B: Asthama
C: Carcinoma | D: Tuberculosis

6. $CO_2 + H_2O \xrightarrow{Carbonic\ anhydrase} ?$

A: HCO_3 | B: H_2CO_3
C: H_2O_2 and CO | D: H_2O_2 and CO2

7. **Pigmentation of the skin is due which of the following?**

A: Leucocytes | B: Lymphocytes
C: Monocytes | D: Melanocytes

8. **The simplest monosachride containing keto group is ?**

A: Glyceraldehyde | B: Dihyroxy acetone
C: Glucose | D: Ribose

9. **Which one of the following organism have single circuit heart?**

A: Frog | B: Earth worm
C: Humans | D: Fish

10. **Respiratory pigment in the humans is known as?**

A: Myoglobin | B: Haemoglobin
C: Bilirubin | D: Biliverdin

11. **Percentage of oxygen in the inhaled air is?**

- A: 20%
- B: 21%
- C: 22%
- D: 23%

12. **How many molecules of oxygen can combine with iron contaning ring structure in myoglobin?**

- A: 1
- B: 2
- C: 3
- D: 4

13. **At rest the average rate of breathig is?**

- A: 10-15 times
- B: 15-20 times
- C: 20-25 times
- D: 25-30 times

14. **In cutaneous respiration gaseous exchange takes place through?**

- A: Gills
- B: Skin
- C: Buccal cavity
- D: Lungs

15. **Tiny thin walled ducts present in the lungs of birds are called?**

- A: Alveoli
- B: Bronchi
- C: Parabronchi
- D: Bronchioles

16. **What is the residual volume of air which always remain insides the lungs of humans?**

- A: 3.5 liters
- B: 0.5 liters
- C: 1.5 liters
- D: 5.0 liters

17. **Decrease in blood pH has what effect on the oxygen bound to haemoglobin?**

- A: It increases
- B: It decreases
- C: It remains same.
- D: It may result in increase or decrease both depending on other conditions.

18. **With increase in temperature the oxygen carrying capacity of blood?**

- A: Increases
- B: Decreases
- C: Remains same.
- D: May increase or decrease.

19. **Maximum amount of Oxygen normal human blood can absorb and carry at sea level is about?**

- A: 10ml/100ml of blood
- B: 15ml/100ml of blood
- C: 20ml/100ml of blood
- D: 25ml/100ml of blood

20. **Which of the following disease results in the breakdown of alveoli?**

- A: Asthma
- B: Tuberculosis
- C: Cancer
- D: Emphysema

TRANSPORT

TEST 1

1. **Exchange of material in the capillaries takes place through?**

- A: Active transport
- B: Endocytosis
- C: Intracellular space
- D: All of the above

2. **The right atrium of human heart receives the deoxygenated blood through which of the following?**

- A: Aorta
- B: Pulmonary artery
- C: Pulmonary veins
- D: Venae cavae

3. **What is the location of Sinoatrial (S-A) node in the human heart?**

- A: Lower end of right atrium.
- B: Upper end of right atrium.
- C: Lower end of left atrium.
- D: Upper end of left atrium.

4. **In human heart, atrias are filled with the blood during?**

- A: Diastole
- B: Atrial systole
- C: Ventricular systole
- D: Extrasystole

5. **Which one of the following protein causes blood clotting?**

- A: Pepsinogen
- B: Immunoglobulin
- C: Fibrinogen
- D: Clabulin

6. **In arteries, muscular tissue is present in which layer?**

- A: Outer layer
- B: Middle layer
- C: Inner layer
- D: All the layers

7. **After a fatty meal, the fat globules make up ______% of lymph?**

- A: 0.2 %
- B: 0.5 %
- C: 1 %
- D: 2 %

8. **In phloem which one of the following is directly involved in the transportation of organic solutes?**

- A: Companion cell
- B: Latex containing cell
- C: Sieve elements
- D: Parenchyma cell

9. **Wall of the heart is composed of how many layers?**

- A: 2 layers
- B: 3 layers
- C: 4 layers
- D: 5 layers

10. Oxygenated blood is supplied to the human body through?

- A: Aorta
- B: Vena cava
- C: Pulmonary artery
- D: Pulmonary vein

11. Movement of water molecules from a region of higher concentration to the region of lower concentration through a partially permeable membrane is called?

- A: Diffusion
- B: Active transport
- C: Passive transport
- D: Osmosis

12. Mycorrhizae that are present in the 90% of the failies of flowering plant is a?

- A: Bacteria
- B: Amoeba
- C: Virus
- D: Fungi

13. Which one of the following organism has no special transport system?

- A: Lizard
- B: Planaria
- C: Cockroach
- D: Earth worm

14. In birds and mammals pulmonary trunk arises from which of the following?

- A: Right ventricle
- B: Left ventricle
- C: Auricle
- D: Aorta

15. All reptiles have incompletely partitioned ventricles except?

- A: Lizard
- B: Snake
- C: Tuatra
- D: Crocodile

16. Mature mammalian red blood cells do not have:

- A: Red colour
- B: Nucleus
- C: Fluids
- D: Haemolglobin

17. The right atrium of heart usually recieves the ?

- A: Deoxygenated blood
- B: Oxygenated blood
- C: Filtered blood
- D: Non-filtered blood

18. What is the duration of 1 complete heart beat in the humans?

- A: 0.6 sec
- B: 0.7 sec
- C: 0.8 sec
- D: 0.9 sec

19. Most ions are taken up by the roots by which of the following processes?

- A: Active transport
- B: Passive transport
- C: Facilitated diffusion
- D: Diffusion

20. Which of the following cells are the highest in number in the human blood?

- A: Monocytes
- B: Red blood cells
- C: Platelets
- D: Lymphocytes

TEST 2

1. **In human heart, the blood passes from left atrium to left ventricle through?**

- A: Tricuspid valve
- B: Aortic valve
- C: Bicuspid valve
- D: Pulmonary valve

2. **The rate of transpiration doubles by every rise of ____ in temperature?**

- A: 5 degree centigrade
- B: 10 degree centigrade
- C: 20 degree centigrade
- D: 25 degree centigrade

3. **Which of the following statement about the structure of human heart is correct?**

- A: Wall of left ventricle is thicker than that of the right ventricle.
- B: Wall of left ventricle is thinner than that of the right ventricle.
- C: Wall of left ventricle has same thickness as that of the right ventricle.
- D: Walls of the atria are thicker than that of the ventricles.

4. **Strength to the cell wall of xylem is provided by which of the following?**

- A: Chitin
- B: Peptidoglycan
- C: Lignin
- D: Keratin

5. **Right atrium is separated from right ventricle by:**

- A: Semilunar valve
- B: Tricupsid valve
- C: Bicupside valve
- D: Septum

6. **In the root cells, the cytoplasmic strands that extend through pores in adjacent cell walls are known as?**

- A: Microvilli
- B: Plasmodesmata
- C: Pseudopods
- D: Pilli

7. **The human heart is enclosed in a double membranous sac called?**

- A: Pericardial cavity
- B: Pleural cavity
- C: Peritoneal cavity
- D: Meninges

8. **Which of the following white blood cells destroy small particle by phagocytosis?**

- A: Basophils
- B: Eosinophils
- C: Lymphocytes
- D: Neutrophils

9. **Which vein carry oxygenated blood?**

- A: Renal vein
- B: Subclavian vein
- C: Jugular vein
- D: Pulmonary vein

10. In human transport system, the exchange of materials happens in which of the following?

- A: Arteries
- B: Veins
- C: Capillaries
- D: All of the above.

11. How much surface area of the root is provided by the root hair?

- A: 58%
- B: 67%
- C: 73%
- D: 78%

12. Which of the following is not a function of blood?

- A: Transport of gases
- B: Maintain body temperature
- C: Production of red blood cell
- D: Provide immunity

13. All veins carry deoxygenated blood except?

- A: Superior vena cava
- B: Inferior vena cave
- C: Pulmonary veins
- D: Hepatic veins

14. Oedema is caused by the salt and water retention by which of the following organ?

- A: Liver
- B: Spleen
- C: Kidney
- D: Intestines

15. Imbibation may result in the volume increase of dry seeds by how many times?

- A: 100 times
- B: 200 times
- C: 300 times
- D: 400 times

16. The lymphatic vessels of the body empty the lymph into the blood stream at the:

- A: Bile duct
- B: Subclavian vein
- C: Abdominal vein
- D: Jugular vein

17. The composition of materials flowing in the phloem has been studied by using which of the following insects?

- A: Mosquito
- B: Housefly
- C: Aphids
- D: Tady bug

18. Cuticular transport accounts for approximately what percentage of total transpiration in the plants?

- A: 2-4%
- B: 5-7%
- C: 7-9%
- D: 4-6%

1. **At very high temperature a hormone abscisic acid is released by which one of the following cells?**

- A: Guard cell
- B: Mesophyll cell
- C: Epidermal cell
- D: Xylem cell

2. **Sinus venousus in the fish receives which of the following?**

- A: Oxygenated blood from body
- B: Deoxygenated blood from body
- C: Oxygenated blood from gills
- D: All of the above.

3. **Heparin - a substance that inhibit blood clotting is produced by which of the following cells?**

- A: Basophils
- B: Platelets
- C: Monocytes
- D: Eosinophils

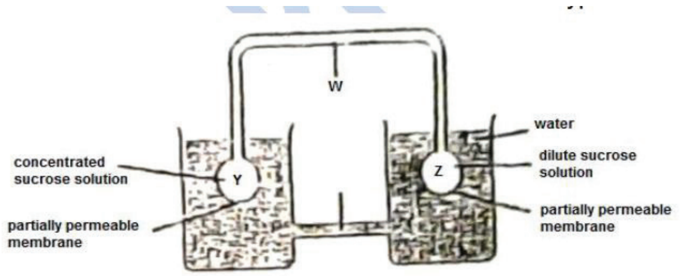
4. **The largest lymph duct called thoracic lymph duct drains into ?**

- A: Subclavian vein
- B: Renal vein
- C: Pulmonary vein
- D: Hepatic portal vein

5. **Right atrium is separated from right ventricle by :**

- A: Biscuspid valve
- B: Semilunar valve
- C: Tricuspid valve
- D: Interatrial septum

6. **The diagram shows a model to demonstrate the mass flow hypothesis of translocation**



In a plant, what are the structures W, X, Y and Z what is the direction of flow of solution along W?

	Phloem	Xylem	Roots	Leaves
A	W	X	Y	Z
B	W	X	Z	Y
C	X	W	Y	Z
D	X	W	Z	Y

- A: A
- B: B
- C: C
- D: D

7. Which of the following statement regarding veins is not correct?

- A: Veins carry blood from body to heart.
- B: Veins have valves.
- C: Pulse can be felt on the veins.
- D: Veins have few elastic fibers.

8. Different types of white blood cells in the humans are physically distinguished on the basis of which of the following?

- A: Color and shape
- B: Shape of nucleus and thickness of cell wall
- C: Shape of nucleus and density of granules
- D: Number of nucleus and density of granules

9. The oxygenated blood from lungs to heart is transported via?

- A: Pulmonary artery
- B: Coronary artery
- C: Pulmonary vein
- D: Hepatic artery

10. Mixing of oxygenated and deoxygenated blood occurs in which of the following organisms?

- A: Amphibians
- B: Fish
- C: Reptiles
- D: Human

11. What is Tonoplast?

- A: Membrane of cell
- B: Membrane of mitochondria
- C: Membrane of vacuole
- D: Membrane of endoplasmic reticulum

12. Leukaemia results from uncontrolled production of which one of the following cells?

- A: White blood cells
- B: Red blood cells
- C: Platelets
- D: All of the above

13. Sieve tubes and companion cells communicate with each other through which of the following?

- A: Pseudopods
- B: Sieve pores
- C: Stomata
- D: Plasmodesmata

14. Which of the following cell type are the biggest composition of the white blood cells?

- A: Basophils
- B: Lymphocytes
- C: Neutrophils
- D: Monocytes

15. In the cell wall of plant cells, which of the following components is not involved in imbibition?

- A: Cellulose
- B: Pectin
- C: Chitin
- D: Lignin

16. **Which of the following is a genetically transmitted abnormality of haemoglobin?**

- A: Leukaemia
- B: Thalassaemia
- C: Oedema
- D: Leucopenia

17. **Inner side of bean shaped gaurd cell is?**

- A: Concave and has a thick wall
- B: Concave and has a thin wall
- C: Convex and has a thick wall
- D: Convex and has a thin wall

18. **Which white blood cells are the least in number amongst the five types of Leucocytes?**

- A: Basophils
- B: Eosinophils
- C: Monocytes
- D: Lymphocytes

19. **Interconnected system of arteries, veins and capillaries is present in which of the following?**

- A: Hydra
- B: Planaria
- C: Earthworm
- D: Cockroach

20. **Inferior vena cava is formed by the union of which of the following?**

- A: 2 venal veins
- B: 2 femoral veins
- C: 2 hepatic veins
- D: 2 iliac veins

TEST 4

1. **What is the normal systolic blood pressure in the human beings?**

- A: 110 mmHg
- B: 120 mmHg
- C: 130 mmHg
- D: 140 mmHg

2. **Lenticels are aerating pores present in which part of the plants?**

- A: Leaves
- B: Bark
- C: Roots
- D: Flowers

3. **Pure water has the maximum water potential. The value of that maximum water potential is?**

- A: Zero
- B: 1
- C: 10
- D: 100

4. **Which of the following has the highest blood pressure?**

- A: Arteries
- B: Veins
- C: Capillaries
- D: They all have the same blood pressure.

5. Carrier molecules involved in facilitating diffusion are?

- A: Lipids
- B: Lipoproteins
- C: Proteins
- D: Carbohydrates

6. Which one of the following is a precursor of steroid hormones?

- A: Glucose
- B: Lipoprotein
- C: Phospholipid
- D: Cholesterol

7. In human heart, conduction of electrical impulse from SA node to AV node takes place in how much time?

- A: 0.15 sec
- B: 0.16 sec
- C: 0.17 sec
- D: 0.18 sec

8. Which of the following statement regarding the four chambers of the human heart is correct?

- A: Two lower atria are thick walled and two upper ventricles are thin walled
- B: Two lower atria are thin walled and two upper ventricles are thick walled
- C: Two upper atria are thick walled and two lower ventricles are thin walled
- D: Two upper atria are thin walled and two lower ventricles are thick walled

9. What is the normal pH of human blood?

- A: 6.8
- B: 7.0
- C: 7.2
- D: 7.4

10. Which of the following statement regarding Red Blood Cells (RBCs) is correct?

- A: They can divide through out their life cycle.
- B: They can divide only when they are 2 months old.
- C: They can divide when they are mature.
- D: Mature RBCs do not divide.

11. The type of agranulocyte that stays in blood for a few hours and then enters tissue and becomes macrophages is called ?

- A: Lymphocytes
- B: Monocytes
- C: Eosinophil
- D: Basophils

12. The rate of diffusion for sugar movement in the phloem is approximately?

- A: 1 meter per six years
- B: 1 meter per seven years
- C: 1 meter per eight years
- D: 1 meter per nine years

13. What is the location of Casparian strips?

- A: Cells of xylem
- B: Cells of pericycle
- C: Epidermal cells of roots
- D: Endodermis cells of roots

14. In the lymphatic system, the thoracic lymph duct opens in which of the following veins?

- A: Juglar vein
- B: Superior vena cava
- C: Sub clavian vein
- D: Inferior vena cava

15. Plants open their stomata by activitely pumping _____, into the gaurd cells?

- A: Potassium ions
- B: Sodium ions
- C: Chloride ions
- D: Magnesium ions

16. After their life span of four months is over, the red blood cells are disintegrated in which of the following organs?

- A: Kidneys and lungs
- B: Lungs and spleen
- C: Pancreas and liver
- D: Liver and spleen

17. The average life span of red blood cells is about:

- A: Two months
- B: One months
- C: Five months
- D: Four months

18. Which one of the following pathways of water absorption become discontinous in the endodermis?

- A: Vacuolar pathway
- B: The sysmplast pathway
- C: The apoplast pathway
- D: All of the above

19. What percentage of water pulled up in the leaves is transpired?

- A: 99%
- B: 90%
- C: 83%
- D: 1%

20. Which one of the following is not a lymphoid organ?

- A: Tonsils
- B: Thymus
- C: Bone marrow
- D: Spleen

IMMUNITY

TEST 1

1. How many types of immunities are there?

- A: 2
- B: 3
- C: 4
- D: 5

2. Which of the following diseases affect the immunity system?

- A: Polio
- B: Measles
- C: Cancer
- D: AIDS

3. In -------- response, B cells produce plasma cells that synthesize antibodies and release in blood and plasma tissue.

- A: Cell Mediated
- B: Humoral
- C: Hormonal
- D: Phototactic

4. Antigen is a foreign protein or any other molecule which stimulates the formation of:

- A: MHC complex
- B: Immunogen
- C: Antibodies
- D: Mucus

5. What is the primary function/s of vaccination?

- A: Treat a disease.
- B: Strengthen phagocytes.
- C: Develop immunity against a disease.
- D: All of the above.

6. In passive immunity which of the following components is injected into the blood ?

- A: Antigen
- B: Immunogen
- C: Serum
- D: Immunoglobulin

7. Mucous membranes are part of body defence system and they offer

- A: Physical barrier
- B: Mechanical barrier
- C: Chemical barrier
- D: Biological barriers

8. Immediate protection is obtained from ?

- A: Passive immunity
- B: Active immunity
- C: Vaccination
- D: Natural active immunity

9. Which of the following forms the plasma cell clone?

- A: Lymphocytes T
- B: Lymphocytes B
- C: Both Lymphocytes B and T
- D: Neither Lymphocytes B nor T

10. Treatment by using attenuated cultures of bacteria is called :

- A: Chemotherapy
- B: Sterilization
- C: Antiseptics
- D: Vaccination

11. AIDs is caused by which of the following?

- A: Bacteria
- B: Virus
- C: Fungus
- D: Protozoa

12. B- Lymphocytes are named because of their relationship to :

- A: Bile Duct
- B: Bone Marrow
- C: Blood
- D: Bursa of fabricus

13. Which of the following are the components of immune system?

- A: Lymphocytes B
- B: Lymphocytes T
- C: Monocytes
- D: Both A and B

TEST 2

1. **which one of the following is the most numerous white blood cells?**

- A: Eosinophils
- B: Monocytes
- C: Neutrophils
- D: Lymphocytes

2. **Antibodies vanish quickly in what kind of immunity?**

- A: Active immunity
- B: Passive immunity
- C: Natural induced immunity
- D: Auto immune response

3. **Injection of antisera is an example of?**

- A: Active immunity
- B: Passive immunity
- C: Natural induced immunity
- D: Auto immune response

4. **Thymus gland is involved in the maturation of ?**

- A: Platelets
- B: B-lymphocytes
- C: Eosinophils
- D: T-lymphocytes

5. **Antibodies are produced against invading cells by:**

- A: Lymphocytes
- B: Eosinophils
- C: Basophils
- D: Neutrophils

6. **T-LYMPHOCYTE recognise and attack microorganisms or transplanted organ and tissues. This effect is called :**

- A: Cell Mediated response
- B: Humoral immunity response
- C: Active immunity
- D: Passive immunity

7. **What is the main function of immunity?**

- A: Help in adaptation.
- B: Maintain the internal body environment.
- C: Prevent or limit infections.
- D: All of the above.

8. **Antibodies are formed by which of the following cells?**

- A: T-cells
- B: B-cells
- C: Macrophages
- D: Neutrophils

9. **In passive immunity which of the following components are injected into body?**

- A: Immunoglobulins
- B: Antigens
- C: Immunogens
- D: Saliva

10. **What is/are the machanism/s which defend the body against foreign invaders?**

- A: Physical barriers
- B: Phagocytes
- C: Immune system
- D: All of above

11. Which part of antibody recognizes the antigen during immune response?

- A: Heavy part
- B: Variable part
- C: Light part
- D: Constant part

12. What type of immunity is achieved by injecting antibodies.

- A: Active immunity
- B: Passive immunity
- C: Artificially induced immunity
- D: Naturally induced immunity

13. Snake bite is treated with which type of immunization?

- A: Active
- B: Passive
- C: Humoral
- D: Specific

14. T lymphocyte become mature and competent under the influence of:

- A: Bursa of fabricus
- B: Thymus gland
- C: Spleen
- D: Liver

15. Which part of antibody recognises the antigen during immune response?

- A: Heavy part
- B: Light part
- C: Constant part
- D: Variable part

16. How many types of antibodies are there?

- A: 2
- B: 3
- C: 4
- D: 5

17. Two identical light chains and Two identical heavy chains in antibody molecule are linked by:

- A: Disulfied bridges (S-S)
- B: Peptide bond
- C: Glycosidic bond
- D: Ionic bond

18. Vaccination is an example of what kind of immunity?

- A: Active immunity
- B: Passive immunity
- C: Natural induced immunity
- D: Auto immune response

19. What is a disadvantage of passive immunity?

- A: It is specific.
- B: Response produced is immediate.
- C: It is short lived.
- D: Consist of antibodies only.

20. Antigens are often which kind of biological molecules?

- A: Lipids
- B: Carbohydrates
- C: Complex of carbohydrates and lipoproteins
- D: Proteins

1. **Skin and mucous membrane are part of the body defense system and they form the:**

- A: Mechanical barriers
- B: Physical barriers
- C: Chemical barriers
- D: Bilological barriers

2. **What kind of immunization shall you reommend for tetanus?**

- A: Natural induced immunity
- B: Auto immune response
- C: Active immunity
- D: Passive immunity

3. **Antobodies are produced by which of the following lymphocytes?**

- A: A lymphocytes
- B: B lymphocytes
- C: T lymphocytes
- D: B and T lymphocytes

4. **Response of the body against transplanted organ is**

- A: Homeostatic response
- B: Behavioral response
- C: Primary response
- D: Cell mediated response

5. **How many types of polypeptide chains are present in lgG antibodies?**

- A: 4
- B: 5
- C: 6
- D: 7

6. **In the structure diagram of an antibody molecule which portion is occupied by variable chains?**

- A: Lower region
- B: Upper region
- C: Middle region
- D: In between chains

7. **Antigen binding site of antibody consists of?**

- A: Constant portion of heavy and light chains.
- B: Variable portion of light and heavy chains.
- C: Variable portion of heavy chains only.
- D: Constant portion of light chains only.

8. **Antibodies are proteins and made up of how many polypeptide chains?**

- A: 1
- B: 2
- C: 3
- D: 4

9. **Passive immunity is used against**

- A: Malaria
- B: Typhoid
- C: Dengue
- D: Tetanus

10. Which gland plays an important part in making T-cells immunologically competent?

- A: Thyroid gland
- B: Pituitary gland
- C: Thymus gland
- D: Adrenal gland

11. Which of the following statement is true?

- A: Humoral immune response involves antibodies while cell mediated response does not involve antibodies.
- B: Humoral immune response does not involves antibodies while cell mediated response involve antibodies.
- C: Both humoral immune response and cell mediated response involve antibodies.
- D: Neither humoral immune response nor cell mediated response involve antibodies.

12. Which one of the following glands is involved in the production of lymphocytes?

- A: Pineal
- B: Pituitary
- C: Thymus
- D: Adrenal

13. An antibody molecule contains four polypeptide chains which are linked through ?

- A: Hydrogen bond
- B: Ionic bond
- C: Covalent bond
- D: Disulphide bond

14. Which of the following is not a component of cell mediated immunity?

- A: Helper T-cells
- B: Cytotoxic T-cells
- C: Macrophages
- D: Plasma cells

TEST 4

1. The immunity in which T-cells recognize the antigen or microorganism is called ?

- A: Tissue grafting
- B: Phagocytosis
- C: Cell mediated immunity / response
- D: Humoral immunity / response

2. Lymphocyte B is related with which of the following?

- A: Thymus gland
- B: Bacteria
- C: Bursa of Fabricius
- D: None of the above.

EXCERTION & OSMOREGULATION
TEST 1

1. Main component of flame cells responsible for excretion is ?

- A: Cilia
- B: Flagella
- C: Flame
- D: Fluid

2. 'Cleaning of blood' refers to ?

- A: Hemodialysis
- B: Lithotripsy
- C: Liposuction
- D: Amputation

3. In cockroaches , nitrogenous wastes are excreted via which structure?

- A: Nephrostome
- B: Rectum
- C: Skin
- D: Anus

4. Antidiuretic hormone helps in reabsorbtion of water by changing permeability of ?

- A: Proximal tubule
- B: Distal tubule
- C: Collecting duct
- D: Loop of henle

5. Ascending loop of henle is impermeable to ?

- A: Water
- B: Na ions
- C: Glucose
- D: Drugs

6. Fever is caused by chemicals produced by cells called ?

- A: Heat shock proteins
- B: Pyrogens
- C: Aldosterone
- D: Toxins

7. Which of the following is the major hormone released from posterior pituitary?

- A: Aldosterone
- B: ADH
- C: Prolactin
- D: FSH

8. Freezing temperature kills cells by ?

- A: Super cooling the cytosol
- B: Ice crystal formation
- C: Degenarating lipids
- D: Increasing proportion of unsaturated fatty acids

9. The mechanism of regulation generaly between organism and its environment of solute and gain and loss of water is called?

- A: Excretion
- B: Osmoregulation
- C: Coordination
- D: Thermoregulation

10. All useful constituents of glomerular fitrate are reabsorbed in ?

- A: Glomerulus
- B: Proximal tubule
- C: Loop of henle
- D: Collecting duct

11. Plumage fluffing is a ?

- A: Structural adaptation
- B: Physiological adaptation
- C: Behavioral adaptation
- D: Psychological adaptation

12. Which of the following is a function of liver ?

- A: Storage
- B: Synthesis
- C: Recycling
- D: They are all functions of liver.

13. Basic functional unit of kidney is ?

- A: Nephron
- B: Pelvis
- C: Ureter
- D: Cortex

14. Uricotelics include?

- A: Fishes
- B: Amphibians
- C: Mammals
- D: Reptiles

15. Reabsorbtion of water by counter current multiplier mechanisms takes place at ?

- A: Proximal tubule
- B: Distal tubule
- C: Collecting duct
- D: Loop of henle

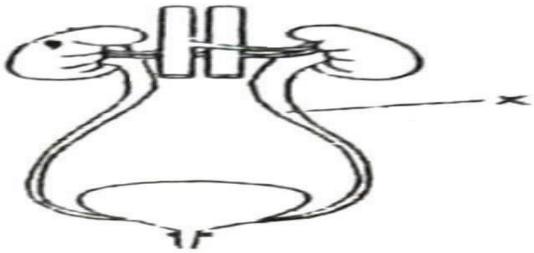
16. Major exretory product in plants in their photosynthetic mode is?

- A: Carbon dioxide and water
- B: Ammonia
- C: Urea
- D: Oxygen

17. Which function of liver is responsible for its link with kidneys in excretion?

- A: Storage
- B: Detoxification
- C: Conversion
- D: Recycling

The diagram shows the human urinary system.



18. Which substances is not found in the liquid at in x in a healthy person?

- A: Glucose
- B: Salt
- C: Water
- D: Protein

19. Which of these is not a heat loss mechanism ?

- A: Radiation
- B: Evaporation
- C: Sweating
- D: Shivering

20. Isotonic environment results in normal cell because?

- A: External environment is more concentrated than internal
- B: Internal environment is more concentrated than external
- C: Concentration of both internal and external environment is different
- D: Concentration of both internal and external environment is same

TEST 2

1. Major role of sweat glands is ?

- A: Excretion of nitrogenous wastes
- B: Thermoregulation
- C: Protection against microorganism
- D: Detoxification

2. Which of these is not a structural adaptation for heat regulation ?

- A: Panting
- B: Plumage fluffing
- C: Sweat glands
- D: Pelage

3. What will be the adaptation to regulate osmotic balance in fresh water environment?

- A: Discharging excess water
- B: Excreting more salt
- C: Excreting less water
- D: Both B and C

4. Which one of the following is the main nitrogenous waste product in humans?

- A: Urea
- B: Ammonia
- C: Salts
- D: Uric acid

5. Reabsorption of useful constituents takes place in?

- A: Proximal Tubule
- B: Distal tubule
- C: Bowman's Capsule
- D: Glomerulus

6. How many iodine atoms are present in thyroxine?

- A: 3
- B: 4
- C: 2
- D: 5

7. Amount of water for excretion of 1g of nitrogen as uric acid is?

- A: 500ml
- B: 100ml
- C: 50ml
- D: 1ml

8. What are the 2 types of dialysis ?

- A: Hemodialysis and perineal dialysis
- B: Thoracic and peritoneal dialysis
- C: Peritoneal and perineal dialysis
- D: Hemodialysis and peritoneal dialysis

9. Aldosterone helps in conservation or active absorbtion of ?

- A: Sodium
- B: Calcium
- C: Potassium
- D: Bicarbonate ion

10. Ammonia is the main excretory product in which animals?

- A: Freshwater animals
- B: Birds
- C: Insects
- D: Terrestrial mammals

11. Which part of the plants is called excretophores ?

- A: Trunk
- B: Branches
- C: Leaves
- D: Stalk of bulb

12. Blood enters the glomerulus through:

- A: Afferent arteriole
- B: Efferent arteriole
- C: Renal vein
- D: Renal artery

13. Maximum reabsorbtion takes place in which part of the nephron?

- A: Distal tubule
- B: Villi
- C: Cortical tissue
- D: Proximal tubule

14. Anhydrobiosis is main characteris tics of ?

- A: Marine animals
- B: Freshwater animals
- C: Terrestrial animals
- D: Both A and B

15. Ejection of milk from mammary glands is under the control of which hormone?

- A: Androgen
- B: Oxytocin
- C: Progesterone
- D: Estrogen

16. Alpha cells of pancreas secrete a hormone called :

- A: Glucagons
- B: Insulin
- C: Gastrin
- D: Renin

17. Which part of the trees store strange chemicals deposited in old xylem and no longer used for water transport?

- A: Ebony
- B: Pholem
- C: Secondary xylem
- D: Roots

18. In oaks and maples, extreme low temperature is tolerated by ?

- A: Ice crystal formation in protoplasm
- B: Super cooling of cytosol
- C: Increasing proportion of unsaturated fatty acids
- D: Decreasing proportion of unsaturated fatty acids

19. Response of cell when placed in a hypertonic solution will be?

- A: Turgid cell
- B: Normal cell
- C: Shrunken cell
- D: Cell burst

20. Amount of water required to excrete 1g of nitrogen as urea is?

- A: 500ml
- B: 100ml
- C: 50ml
- D: 1ml

TEST 3

1. **Which one of the following is a steroid hormone?**

- A: Glucagon
- B: Thyroxine
- C: Epinephrine
- D: Oestrogen

2. **Which of the following is capable of varying degrees of endothermic heat production but generally do not regulate their body temperature within a narrow range?**

- A: Reptiles
- B: Frogs
- C: Bats
- D: Flying insects

3. **In nephron, the cup shaped swelling around ball of capillaries is called ?**

- A: Bowmann's capsule
- B: Glomerulus
- C: Loop of henle
- D: Vasa recta

4. **In cactus, the main photosynthetic organ is?**

- A: Stem
- B: Roots
- C: Leaves
- D: Horns

5. **The gonadotrophic hormone of anterior pituitary are**

- A: Prolactin, TSH, Somatotrophin hormone
- B: FSH, LH , Prolactin
- C: ACTH, LH, FSH
- D: LH, FSH, TSH

6. **Saliva and urine for evaporative cooling is used by which of the following?**

- A: Dogs
- B: Bats
- C: Reptiles
- D: Toads

7. **Which one of the following is responsilble for the production of concentrated urine?**

- A: Proximal tubule
- B: Distal tubule
- C: Bowman's capsule
- D: Glomerulus

8. **In excess water supply, reabsorbtion of water is reduced by ?**

- A: Release of antidiuretic hormone
- B: Inhibition of ADH release
- C: Counter current mechanism
- D: Both A and C

9. **Most marine invertebrates are?**

- A: Osmoconformers
- B: Hypertonic as compared to environment
- C: Hypotonic as compared to environment
- D: Isotonic

10. Loss of salt in freshwater animals as in fishes is compensated by?

A: Active uptake of salts by gills and skin
B: Retention of urine in body
C: Preference of salt containing food
D: Both A and C

11. Aldosterone is basicaly involved in the uptake of ?

A: Sodium
B: Chloride
C: Glucose
D: Water

12. With each heart beat what percentage of total blood is supplied to the kidneys?

A: 10%
B: 1%
C: 20%
D: 30%

13. What are three components of mechanism of heomostatic regulations?

A: Sensory, motor and associative neurons
B: Receptors, control center and effectors
C: CNS, peripheral nervous system and diffused nervous system
D: Cerebrum, cerebellum and pons

14. Those nephrons which are present along the border of cortex and medulla are called :

A: Juxtamedullary nephrons
B: Cortical nephrons
C: Internal nephrons
D: The tissue of cortex

15. Metabolism of purines and pyramidines doesn't produce?

A: Hypoxanthine
B: Uric acid
C: Allantoin
D: Creatinine

16. Lower internal salt concentration than sea water is maintained in most?

A: Marine invertebrates
B: Cartilage fishes
C: Bony fishes
D: Both B and C

17. When water is in short supply increased water retention occurs through :

A: Corticol Nephrons
B: Proximal Convulated tubule
C: Juxtamedullary nephrons
D: Tissue of cortex

18. What is the most likely response of hypothalamus to the rising temperature?

A: Activate sekeletal muscles
B: Divert blood from skin to deeper tissues
C: Close sweat glands
D: Dilate skin bood vessels

19. Cells of Bowmann's capsule lining are called ?

- A: Podocytes
- B: Astrocytes
- C: Fibroblasts
- D: Nephrocytes

20. Plants respond to cold stress by ?

- A: Increasing proportion of unsaturated fatty acids
- B: Decreasing proportion of saturated fatty acids
- C: Decreasing water uptake
- D: Increasing metabolism

TEST 4

1. ADH is released from :

- A: Anterior Pituitary
- B: Posterior Pituitary
- C: Hypothalamus
- D: Thalamus

2. Filtration occurs at which part of nephrons ?

- A: Glomerulus
- B: Loop of henle
- C: Collecting tubule
- D: Convulated tubule

3. Conservation of water in the kidney is done by ?

- A: Counter current mechanism
- B: Hormonal mechanism
- C: Conservation mechanism
- D: Both A and B

4. Which product of liver is responsible for blood clotting ?

- A: Glycogen
- B: Cholestrol
- C: Bile
- D: Plasma protein

5. The term thermoregulation implies to?

- A: Fixed internal temperature
- B: Regulation of solutes
- C: Regulation of water
- D: Maintainace of internal temperature within tolerable range

6. In nephrons, counter current multiplier occurs at :

- A: Loop of henle
- B: Collecting duct
- C: Bowman's capsule
- D: Glomerulus

7. Thyroxine deficiency in adults results in a condition called :

- A: Cretinism
- B: Hypothyroidism
- C: Thyrotoxicosis
- D: Myxedema

8. What is responsible for interstitial fluid concentration as it goes from cortex to medulla ?

- A: Release of ADH
- B: Counter current multiplier
- C: High filtration pressure
- D: Excessive water intake

9. Breaking of kidney stones into tiny pieces by shock waves is called ?

- A: Dialysis
- B: Lithotripsy
- C: Liposuction
- D: Leprotemy

10. Where are waste products deposited in conifers?

- A: Leaves which fall in autumn
- B: Stalk of bulb
- C: Trunk
- D: Secreted into soil

11. When filtrate passes from descending loop of henle, which constituent is reabsorbed the most ?

- A: Na ions
- B: Glucose
- C: Water
- D: Drugs

12. Active pumping of Na^+ occurs at which part of nephron?

- A: Proximal tubule
- B: Ascending limb of loop of Henle
- C: Descending limb of loop of Henle
- D: Collecting duct

13. Metanephridium is excretory system in ?

- A: Cockroach
- B: Flatworms
- C: Earthworms
- D: Vertebrates

14. Which one of the following parts of excretory system in human act as Counter-Current Multiplier?

- A: Kidney
- B: Cortex
- C: Medulla
- D: Loop of Henle

15. Property of a system in which variables are regulated so that internal conditions remain stable and relatively constant is called?

- A: Osmoregulation
- B: Functional organization
- C: Hypothalamism
- D: Homeostasis

16. Primary structure for eliminating wastes in humans is ?

- A: Kidney
- B: Liver
- C: Skin
- D: Both A and B

17. Which part of kidney is specificaly instrumental in production of concentrated urine?

- A: Cortical nephrons
- B: Juxtamedullary nephrons
- C: Pelvis
- D: Ureter

18. Which one is not synthesized by liver ?

- A: Plasma proteins
- B: Urea
- C: Lipoprotein
- D: Blood cells

19. Heat shock proteins prevent enzyme degeneration by ?

- A: Breaking enzymes into smaller pieces
- B: Embracing them
- C: Attaching them to organelles
- D: Increasing there activities

20. Collecting tubules of nephrons open into ?

- A: Cortex
- B: Pelvis
- C: Ureter
- D: Medulla

SUPPORT & MOVEMENTS

TEST 1

1. Which one of the following is not a growth movement?

- A: Epinasty
- B: Hyponasty
- C: Geotropism
- D: Nutation

2. Which of the following muscle is an antagonistic member of Biceps brachii?

- A: Bracheoradialis
- B: Brachialis
- C: Extensor muscle of the forearm
- D: Triceps

3. Which of the following plays the major role in providing support to young herbaceous part of the plant?

- A: Epidermis with higher turgor pressure
- B: Cells of cortex
- C: Collenchyma cells
- D: Sclerenchyma cells

4. Which of the following is a ball and socket joint?

- A: Elbow
- B: Knee
- C: Shoulder
- D: Both B and C.

5. Elbow joint is an eample of?

- A: Fibrous joint
- B: Ball & socket joint
- C: Cartilaginous joint
- D: Hinge joint

6. Psychological inability to contract muscles is known as?

- A: Muscle disorder.
- B: Muscle fatigue.
- C: Tetany
- D: Cramp.

7. Which one of the following is a bone of axial skeleton?

- A: Femur
- B: Rib
- C: Radius
- D: Clavide

8. Skeletal muscle has how many parts?

- A: 5
- B: 4
- C: 3
- D: 2

9. An increase in plant girth due to activity of _________ is called secondary growth?

- A: Cork cambium
- B: Pith
- C: Vascular cambium
- D: Both A and C

10. Which of the following animal has a hydrostatic skeleton?

- A: Earthworm
- B: Round worm
- C: Tape worm
- D: Pin worm

11. Each end of muscle is attach to the bone by which of the following?

- A: Ligament
- B: Tendon
- C: Fascia
- D: Connective tissue

12. Muscles are made up of many cells which are referred as?

- A: Myofilaments
- B: Myofibrils
- C: Sarcolemma
- D: Muscle fibers

13. Locomotion in planaria is due to which of the following?

- A: Jet propulsion
- B: Accordion like movement
- C: Cilary movement
- D: None of above

14. How many vertebrae are present in coccyx?

- A: 7
- B: 12
- C: 5
- D: 4

15. The pigment which stores oxygen in muscles is ?

- A: Hemoglobin
- B: Myoglobin
- C: Myosin
- D: Actinomyosin

16. Rigor mortis i.e stiffening of body after death results from which of the following?

- A: Accumulation of rigid protein molecule in sarcoplam
- B: Unavailability of ATP, which is necessary to break the link between actin and myosin
- C: Decrease in body temprature after death
- D: All of the above

17. Collagen fibers of bones are harden by the deposition of which of the following?

A: Calcium phosphate
B: Calcium carbonate
C: Calcium sulphate
D: Both A and B

18. Which of the following attach bone to bone?

A: Tendons
B: Ligaments
C: Skeletal muscle
D: Any of the above dependent on the bones.

19. Which of the following is the largest bone in the human body?

A: Femur
B: Sternum
C: Scapula
D: Humerous

20. Which of the following statements about fractures in old age is incorrect?

A: They are more common than in adult age
B: Occur as a result of bone being hin and weak
C: Due to good blood supply it results in quick healing
D: All of them are correct.

TEST 2

1. According to sliding filament theory, when muscle fibers are stimulated by nervous system, which of the following changes occur?

A: I-bands shorten
B: H-zone become visible
C: Z-lines move further apart
D: A-bands broaden

2. How many bones are involved in the formation of each half of pelvic girdle?

A: 4 bones
B: 3 bones
C: 2 bones
D: 1 bones

3. Endoskeleton consist of bone and cartilage is secreted by?

A: Ectoderm
B: Endoderm
C: Mesoderm
D: All of the above

4. Roots of the plant show which of the following behavior?

A: Positive phototropism and negative geotropism
B: Negative phototropism and positive geotropism
C: Negative tactic movement and positive tropic movement
D: None of these

5. How many bones are there in adult human body?

A: 206
B: 208
C: 248
D: 270

6. **How many bones are present in the wrist?**

- A: 4 bones
- B: 6 bones
- C: 8 bones
- D: 10 bones

7. **Which of the following cause most of the increase in the thickness of stem ?**

- A: Primary xylem
- B: Primary phloem
- C: Secondary xylem
- D: Secondary phloem

8. **The proximal bone in hip joint is?**

- A: Tibia
- B: Fibula
- C: Tarsal
- D: Femur

9. **Which of the following contributes to muscle fatigue?**

- A: Relative deficit of ATP.
- B: Accumulation of lactic acid.
- C: Ionic imbalance.
- D: All of the above.

10. **Which one of the following is plantigrade?**

- A: Rabbit
- B: Horse
- C: Carnivor
- D: Monkey

11. **The length of the myofibril from one Z-band to the next is describe as:**

- A: Sarcolemma
- B: Sarcoplasm
- C: Muscle fibre
- D: Sarcomere

12. **Which part of the skeletal muscle moves the bone?**

- A: Origin
- B: Insertion
- C: Belly
- D: Both A and B.

13. **What is the diameter of thick filament myosin?**

- A: 7nm
- B: 8nm
- C: 16nm
- D: 10-100um

14. **Which of the following is the first process after a bone fracture?**

- A: Remodeling
- B: Bony callus formation.
- C: Callus formation.
- D: Hematoma formation.

15. **A smallest contractile unit of muscle contraction called sarcomere is the area between two?**

- A: H-zone
- B: M-line
- C: Z-line
- D: Z-line and H-line

16. Which of the following joint has the highest degrees of movement?

- A: Hinge joint
- B: Cartilaginous joint
- C: Fibrous joint
- D: Ball and Socket joint.

17. Vascular cambium initially appears as actively dividing cells between?

- A: Primary xylem and secondary xylem
- B: Primary xylem and secondary phloem
- C: Primary xylem and primary phloem
- D: Secondary xylem and secondary phloem

18. Which of the following is the most swift form of the locomotion?

- A: Plantigrade
- B: Digitigrade
- C: Unguligrade
- D: Both B and C.

19. Human and mammalian skeleton can be divided into two parts, axial skeleton and:

- A: Appendicular skeleton
- B: Exo skeleton
- C: Endo skeleton
- D: Hydrostatic skeleton

20. Tetany is caused by which of the following?

- A: Hypocalcemia
- B: Hypercalcemia
- C: Clostridum tetani
- D: Hypophosphatemia

TEST 3

1. The most important function of troponin is?

- A: To cover the binding sites on actin molecule
- B: To bind with tropomyosin
- C: To bind with Ca ions
- D: All of the above

2. Insertion of brachialis is in which of the following?

- A: Ulna
- B: Radius
- C: Shaft of radius
- D: Olecronon process of ulna

3. First vertebra of cervical region of vertebral column is known as:

- A: Axis
- B: Sacral
- C: Thoracic
- D: Atlas

4. In human the number of __________ vertebrae is 7.

- A: Cervical
- B: Thoracic
- C: Lumber
- D: Sacrum

5. **Which of the following bones are present in the palm of the human hand?**

- A: Carpals
- B: Metacarplas
- C: Phalanges
- D: Both A and B

6. **Which of the following muscles have only single nuclei cells?**

- A: Smooth muscles
- B: Cardiac muscles
- C: Skeletal muscles
- D: All of the above.

7. **Which one of the following cartilage is the most abundant in human body?**

- A: Elastic
- B: Chondrous
- C: Fibro
- D: Hyaline

8. **Which of the following statement is true about the bands of sarcomere?**

- A: Both A band and I band are anisotropic.
- B: Neither A band nor I band is anisotropic.
- C: Only I band is anisotropic
- D: Only A band is anisotropic.

9. **Which of the following defines Ecdysone?**

- A: An enzyme that digest endocuticle during an arthropodal ecdysis
- B: A newly formed exoskeleton in arthropods
- C: A harmone that regulates moulting in arthropods
- D: None of the above

10. **Which one of the following cells is responsible for the formation of bone?**

- A: Osteoblast
- B: Osteoclast
- C: Osteocytis
- D: None of these

11. **During high metabolic activity, approximately what percentage of lactic acid is broken aerobically?**

- A: 80%
- B: 60%
- C: 40%
- D: 20%

12. **One of the following is a sign of tetanus?**

- A: Flaccid paralysis
- B: Stiffness of jaw and neck muscles
- C: Tremors
- D: Muscles pain

13. **During which of the following process in bone fracture repair, osteoblasts and osteoclasts migrate inward and multiply rapidly?**

- A: Hematoma formation
- B: Callus formation
- C: Bony callus formation.
- D: Remodeling.

14. Which of the following is not true about cardiac muscles?

- A: Their cells have multiple nuclei.
- B: Their cell shape is branched.
- C: Their contraction is spontaneous.
- D: They have regular stripes.

15. When calcium ions are released from sarcoplasmic recticulum they bind with ________ during muscle contraction:

- A: Troponin
- B: Tropomyosin
- C: Sarcolemma
- D: Cytosol's ions

16. Which of the following statement about an arthropod exoskeleton is incorrect?

- A: It permits gaseous exchange.
- B: It contains joints, it form joints.
- C: It provide muscle attachment.
- D: They lack sensation.

17. The repeated protein pattern of myofibrils is called?

- A: Sarcomere
- B: Zyomere
- C: Sarcolemma
- D: Cross Bridges

18. Which of the following fins in the fish body are paired?

- A: Dorsal and ventral
- B: Pectoral and pelvic
- C: Tail fins
- D: All of the above

19. Which of the following muscles have regular stripes?

- A: Smooth
- B: Cardiac
- C: Skeletal
- D: Both A and C.

20. Which of the following cells are involved in soft callus formation?

- A: Fibroblast and osteoblast
- B: Osteoclast
- C: Osteobalst and osteoclast
- D: Chondrocytis

TEST 4

1. How many muscles are there in the human body?

- A: 250
- B: 350
- C: 550
- D: 650

2. Waterproof surfaces such as cuticle of leaf and protective covering of an insects body is :

- A: Phospholipids
- B: Waxes
- C: Terpenoids
- D: Acyl glyceroids

3. **Which one of the following is not a paired facial bone?**

- A: Nasal
- B: Palatine
- C: Maxilla
- D: Vomer

4. **Epinasty is controlled by which of the following?**

- A: Gibberellins
- B: Abscisins
- C: Auxins
- D: Both B and C.

5. **In which of the following joint the muscles are arranged in the same plane as that of the joint?**

- A: Between tibia and fibula
- B: Between clavicle and sternum
- C: Between humerus and scapula
- D: Between femur and tibia

6. **Microcephaly, the small sized skull is caused by?**

- A: Genetic factors
- B: Harmonal factors
- C: Nutritional factor
- D: None of these

7. **Fin thread like extension of cell membrane is called**

- A: Cilia
- B: Flagella
- C: Pilli
- D: Hair

8. **Which one of the following is an example of a non-elastic connective tissue?**

- A: Ligaments
- B: Tendon
- C: Muscles
- D: None of these

9. **Each muscle fibre is surrounded by a membrane which is called:**

- A: Sarcolemma
- B: Twitch fibre
- C: Sarcomere
- D: Capsule

10. **The place of attachment of leaf with the shoot is called?**

- A: Pith
- B: Pulvinus
- C: Pit
- D: Ecdysone

11. **Which of the folowing vertebrates have fish like body?**

- A: Reptiles
- B: Aves
- C: Amphibians
- D: Mammals

12. **The length of myofibril from one Z-band to the next one is called ?**

- A: Sarcomere
- B: Sarcolemma
- C: Sarcoplasm
- D: Muscle fibre

13. **Which of the following animals uses setae and muscles for their locomotion?**

- A: Cockroach
- B: Snail
- C: Earthworm
- D: Star fish

14. Which of the following bones are present in pectoral girdle?

- A: Clavicle
- B: Scapula
- C: Suprascapula
- D: All of the above.

15. Which of the following hormone is responsible for bone weakening in older women?

- A: Progesterone
- B: Estrogen
- C: Parathyroid hormone
- D: Calcitonin

16. Epicuticle part of exoskeleton is made up of which of the following?

- A: Glycocalyx
- B: Waxy lipoprotien
- C: Polycasscahrides
- D: Glycocalyx

17. What is the main function of cross bridges in myosin?

- A: They provide support to muscles
- B: They produce lactic acid.
- C: They link thick and thin myofilaments together during expansion.
- D: They link thick and thin myofilaments together during contraction.

18. The calcium ion released during muscle fibre contraction attach with ?

- A: Myosin
- B: Actin
- C: Tropomyosin
- D: Troponin

19. Which of the following may be a reason for a cramp?

- A: Deficit of ATP.
- B: Drop in PH
- C: High blood sugar level.
- D: Electrolyte depletion.

20. When more energy is required for muscle contraction then that energy can be produced by _____________ as a secondary source.

- A: Glucose
- B: Fructose
- C: Phosphocreatine
- D: Lactic acid

COORDINATION & CONTROL
TEST 1

1. **Overactivity of sympthatic nervous system causes ?**

- A: Disturbance in vision
- B: Constipation
- C: Decrease in blood pressure
- D: Increase in heart rate

2. **Which part of central nervous system controls reflex action below neck?**

- A: Hindbrain
- B: Hypothalamus
- C: Spinal cord
- D: Brain stem

3. **Which one of the following produces Gastrin and secretin ?**

- A: Pancreas
- B: Ovary
- C: Adrenal gland
- D: Gut

4. **Deficiency of insulin leads to ?**

- A: Diabetes mellitus
- B: Diabetes insipidus
- C: Diabetic ketoacidosis
- D: All of above

5. **Which of the following is not a part of the hind brain?**

- A: Cerebral cortex
- B: Medulla
- C: Pons
- D: Cerebellum

6. **What is a normal resting membrane potential of a Neuron?**

- A: -50mv
- B: -60mv
- C: -70mv
- D: -80mv

7. **Which part of the neuron contain nissl's granules?**

- A: Axoplasm
- B: Mylein sheath
- C: Dendrite
- D: Soma

8. **Which one of the following plant hormone is the only promoter of leaf senescence?**

- A: Gibberellins
- B: Cytokinins
- C: Auxins
- D: Abscisic acid

9. **Which of the following transmits nerve impulse from receptor to central nervous system?**

- A: Sensory neuron
- B: Motor neuron
- C: Associative neuron
- D: All of the above

10. **Which one of the following glands is refered to as master gland ?**

- A: Parathyroid gland
- B: Thyroid gland
- C: Adrenal gland
- D: Pituitary gland

11. Which of the following has no central nervous system?

- A: Hydra
- B: Man
- C: Planaria
- D: None of these

12. How many pairs of cranial nerves are present in humans?

- A: 10
- B: 11
- C: 12
- D: 13

13. Which of the following are responsible for the detection of changes in environment?

- A: Receptors
- B: Neuron
- C: Effectors
- D: All of these

14. Gibberellins may be substituted for ____ light ,therefore promote flowering in long day plants?

- A: White
- B: Red
- C: Blue
- D: Green

15. The right and left cerebral hemispheres are connected by a thick band of nerve fibres called?

- A: Medulla
- B: Corpus Callosum
- C: Pons
- D: Hippocampus

16. Concentration of cell bodies of neurons in the peripheral nervous system are called?

- A: Cerebral
- B: Glands
- C: Cardinals
- D: Ganglia

17. Normal action potential of a neuronal cell is?

- A: +50mv
- B: +60mv
- C: +70mv
- D: +80mv

18. Which one of the following is the largest part of the human brain?

- A: Thallamus
- B: Cerebellum
- C: Medulla oblongata
- D: Cerebrum

19. Which structures respond when they are stimulated by impulses coming through motor neurons?

- A: Receptors
- B: Pesponses
- C: Effectors
- D: Transduction

20. Reticular formation is present in?

- A: Forebrain
- B: Midbrain
- C: Hindbrain
- D: Spinal cord

TEST 2

1. Neurosecretory cells are present in which part of brain?

- A: Hypothalmus
- B: Midbrain
- C: Pons
- D: Cerebellum

2. The part of brain which controls breathing, heart rate and swallowing is:

- A: Cerebrum
- B: Cerebellum
- C: Hypothalamus
- D: Medulla

3. Which fibres take impulse towards the cell body?

- A: Dendrites
- B: Nissl's granules
- C: Cytoplasm
- D: Golgi apparatus

4. Which of the following connects the spinal cord to the brain?

- A: Spino connector
- B: Pons
- C: Vortex
- D: Medulla

5. Which of the following is the function of glucagon ?

- A: Glycogen --> glucose
- B: Glucose --> glycogen
- C: Glucose --> lipid
- D: Glucose --> proteins

6. Which one of the following is a Principle mineralo-corticoid?

- A: Cortisol
- B: Cortisone
- C: Aldosterone
- D: Androgens

7. The process which manifest itself by adaptive changes in individual behaviour as a result of experience is called?

- A: Instinct
- B: Learning
- C: Behaviour
- D: Habituation

8. Which one of the following receptor perceive the sensation of cold and warmth?

- A: Free nerve endings
- B: Stray endings
- C: Undifferentiated endings
- D: Electromagenatic receptors

9. The number of cranial nerves in humans is:

- A: 12 pairs
- B: 31 pairs
- C: 24 pairs
- D: 62 pairs

10. **L-dopa or levodopa is used to get some relief from:**

- A: Epilepsy
- B: Parkinson's disease
- C: Alzheimer's disease
- D: Dementia

11. **Which of the following are effectors?**

- A: Muscles
- B: Gland
- C: Nissel granules
- D: Both A & B

12. **Alpha cells of islets of langerhans secrete hormone called:**

- A: Glucocorticoid
- B: Insulin
- C: Glucagon
- D: Aldosterone

13. **Biorhythms shows periodicity of about ?**

- A: 20 hours
- B: 22 hours
- C: 24 hours
- D: 26 hours

14. **Vasopressin amd oxytocin are released from the:**

- A: Placenta
- B: Ovary
- C: Anterior pituitary
- D: Posterior pitutary

15. **The structures which respond when they are stimulated by impulse coming through motor neuron are:**

- A: Effectors
- B: Receptors
- C: Responsers
- D: Transducers

16. **Addison's disease is caused by the destruction of ?**

- A: Adrenal cortex
- B: Pituitary adrenal axis
- C: Adrenal medulla
- D: Hypothalamus

17. **Which of the following of part of central nervous system is present inside the vertrbral column?**

- A: Hind brain
- B: Brain stem
- C: Spinal cord
- D: Medulla

18. **Chlorosis i.e yellowish hue on the leaves results from ?**

- A: Intense sunlight
- B: Deficiency of chlorophyll
- C: Deficiency of water in soil
- D: All of these

19. **Hormones produced by adrenal medulla are?**

- A: Adrenaline and Nor adrenaline
- B: Insulin and glucagon
- C: Cortisol and aldosterone
- D: Gastrin and secretin

20. **Decline in brain function occurs in which of the following disease?**

- A: Parkinson disease
- B: Epilepsy
- C: Alzheimer's disease
- D: All of the above

TEST 3

1. **Which of the following group of hormones is made up of amino acid and its derivatives ?**

A: Vasopressin and antidiuretic hormone
B: Epinephrine and non epinephrine
C: Oestrogen and testosterone
D: Insulin and glucagon

2. **What is the chemical nature of auxin ?**

A: Indole propionic acid
B: Indole carboxylic acid
C: Indole acetaldehyde
D: Indole acetic acid

3. **A neurological condition characterized by involuntary tremors, diminished motor activity and rigidity is called ?**

A: Epilepsy
B: Parkinson's disease
C: Alzheimer's disease
D: Cerebellar tumours

4. **Which of the following is true about the active membrane potential in the neurons?**

A: Inner side is more positive than the outer side.
B: Inner side is more negative than the outer side.
C: Inner and outer sides have same charge.
D: Active membrane potential is same as the rest membrane potential.

5. **Which one of the following part act as thermoregulator?**

A: Cerebrum
B: Cerebellum
C: Thalamus
D: Hypothalamus

6. **Myelin sheath surrounding neuron fibers is primarily made of ?**

A: Carbohydrates
B: Protein
C: Fats
D: Lipids

7. **Which of the following hormone cause delay in aging of fresh leaf crops?**

A: Auxin
B: Cytokinin
C: Ethene
D: Abscisic acid

8. **Which of the following parts of the brain controls precise muscular movement?**

A: Cerebrum
B: Cerebellum
C: Thalamus
D: Medulla

9. **Hormone/s produce by hypothalamus is/are?**

A: Thyroid stimulating hormone
B: Oxytocin and antidiuretic hormone
C: Oxytocin and somatotrophin hormone
D: Antidiuretic hormone

10. **What is the major constituent of birth control pill ?**

- A: Oestrogen
- B: Androgens
- C: Progesterone
- D: Secretin

11. **Which part of the brain control intelligence?**

- A: Thalamus
- B: Hypothalamus
- C: Cerebellum
- D: Cerebral cortex

12. **Which one of the following is effect of sympathetic nervous system?**

- A: Constriction of bronchi
- B: Decrease in heart rate
- C: Promotion of digestion
- D: Dilated pupil

13. **Insufficient secretion of iodothyroxine in adults causes?**

- A: Cretinism
- B: Myxoedema.
- C: Goiter
- D: Exopthalmic goiter

14. **High levels of Aluminium may contribute to the onset of ?**

- A: Parkinson's disease
- B: Epilepsy
- C: Alzeihmer's disease
- D: Gonorrhea

15. **Hormones produce their actions by ?**

- A: Regulating enzymatic reactions
- B: Initiating enzymatic reactions
- C: Initiating chemical reactions
- D: All of the above

16. **Which of the following statement is true regarding resting membrane?**

- A: Sodum ions have higher concentration inside neurons.
- B: Sodium ions have higher concentration outside neurons.
- C: Potassium ions have same concentration inside and outside neurons.
- D: Potassium ions have higher concentration outside neurons.

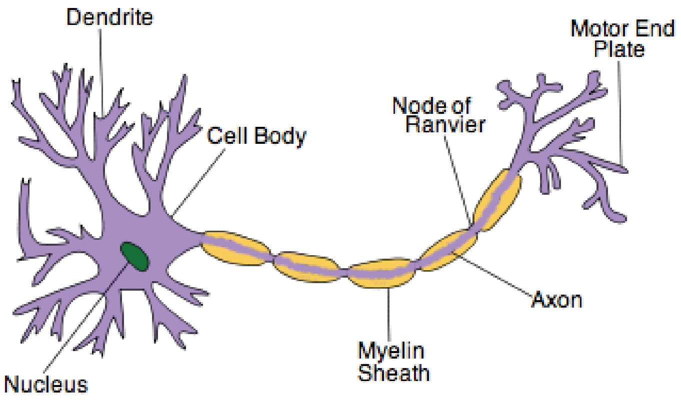
17. **Cell membrane under resting condition is impermeable to all the ions except ?**

- A: Na^{+}
- B: K^{+}
- C: Mg^{+2}
- D: Ca^{+2}

18. **Which of the following statement regarding the resting membrane potential is correct?**

- A: Outer surface of the neuron is more positive
- B: Inner surface of the neuron is more positive
- C: At rest potential, neurons are equally charged inside and outside.
- D: At rest potential inner and outer surface continuously switch between positive and negative charge.

19. The figure below shows what kind of neuron?



- A: Sensory
- B: Associative
- C: Motor
- D: None of the above

20. What is the primary function of meninges?

- A: Transmit neuro signals.
- B: Control potential across neurons.
- C: Provide nutrition to the brain and the spinal cord.
- D: Protect the brain and the spinal cord.

TEST 4

1. Which of the following is controlled by hypothalamus?

- A: Menstrual cycle
- B: Water balance
- C: Body temperature
- D: All of the above.

2. Hippocampus plays an important part in?

- A: Intelligence
- B: Feeling of pleasure.
- C: Learning
- D: Touch sensation

3. What type of sensory structure carrying the touch sensations are present in papillae extending into ridges of the fingertips?

- A: Nerve ending at the base of hair
- B: Meissner's corpuscles
- C: Pacinian corpuscles
- D: Thermoreceptors

4. The part of neroun fibers which conducts impulses away from the cell body is:

- A: Dendron
- B: Dendrites
- C: Peripheral branch
- D: Axon

5. **Which of the following statement is not true?**

- A: Relative abundance of receptors differ greatly.
- B: Hair end organs receive touch stimulus.
- C: Receptors are distributed evenly over the entire surface of the body.
- D: Receptors in the skin are the endings of sensory neurons.

6. **Which of the following ions are involved in the transmission of nerve impulse?**

- A: Ca^{++}
- B: K^{+}
- C: Mg^{++}
- D: Na^{+}

7. **The cytoplasmic fibres that takes impulses away from cell body are called?**

- A: Dendrites
- B: Axons
- C: Cytoplasmic carrier
- D: Both axons and dendrites may take impulse away from the cell body.

8. **Grey matter of spinal cord consist of?**

- A: Myelinated fibres and cell bodies
- B: Non-myelinated fibres and cell bodies
- C: Myelinated fibres only
- D: Cell bodies only

9. **Which of the following is a correct sequence of reflex arc?**

- A: Receptor -> Motor neuron -> Sensory neuron -> Effector
- B: Sensory neuron -> Motor neuron -> Effector -> Receptor
- C: Receptor -> Sensory neuron -> Effector -> Motor neuron
- D: Receptor -> Sensory neuron -> Motor neuron -> Effector

10. **Chemically how many types of hormones are there?**

- A: 2 types
- B: 3 types
- C: 4 types
- D: 5 types

11. **What type of sensation is caused by nociceptors?**

- A: Touch
- B: Temperature
- C: Pressure
- D: Pain

12. **Onset of epilepsy is usually before the age of ?**

- A: 20
- B: 30
- C: 40
- D: 50

13. Which of the following is the function of glucagon hormone?

- A: Glucose --------> lipids
- B: Glucose -----------> Proteins
- C: Glucose -------> Glycogen
- D: Glycogen -------> Glucose

14. Abscisic acid promotes flowering in short day plants and inhibits in long day plants. Which of the following is anatgonistic to abscisic acid in terms of flowering?

- A: Gibberellins
- B: Cytokinins
- C: Auxins
- D: Ethene

15. Neurotransmitter secreted at synapse outside CNS is :

- A: Dopamine
- B: Polypeptide
- C: Androgen
- D: Acetylcholine

16. Parkinson's disease is caused by death in brain area that produces?

- A: Serotonin
- B: Epinephrine
- C: Dopamine
- D: Histamine

17. Microscopic gaps between the neurons are called ?

- A: Transmitters
- B: Synapses
- C: Pores
- D: Nodes

18. Gastrin is a hormone which is produced by the:

- A: Liver
- B: Adrenal gland
- C: Mucosal lining of intestine
- D: Pyloric region of stomach

19. Excess of somatotrophin hormone in early life leads to ?

- A: Acromegaly
- B: Gigantism
- C: Dwarfism
- D: Small stature

20. Hormone produced by median lobe of pituitary gland is

- A: Melanophore stimulating hormone
- B: Antidiuretic hormone
- C: Somatotrophin hormone
- D: Thyroid stimulating hormone